

Division 3. Air Resources Board

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Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

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Article 1. Small Off-Road Engines

**§ 2408. Emission Reduction Credits -- Certification Averaging, Banking, and Trading Provisions.**

(a) Applicability. The requirements of this section are applicable to all small off-road engines produced in the 2000 and later model years. Participation in the averaging, banking and trading program is voluntary, but if a manufacturer elects to participate, it must do so in compliance with the regulations set forth in this section. The provisions of this section are limited to HC+NO<sub>x</sub> (or NMHC+NO<sub>x</sub>, as applicable) and Particulate Matter emissions.

(b) General provisions.

(1) The certification averaging, banking, and trading provisions for HC+NO<sub>x</sub> and Particulate Matter emissions from eligible engines are described in this section.

(2) An engine family may use the averaging, banking and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> and Particulate Matter emissions if it is subject to regulation under this article with certain exceptions specified in paragraph (3) of this section. HC+NO<sub>x</sub> and Particulate Matter credits are interchangeable subject to the limitations on credit generation, credit usage, cross-class averaging and other provisions described in this section.

(3) A manufacturer must not include in its calculation of credit generation and may exclude from its calculation of credit usage, any new engines that are exported from California, or that are not destined for California, unless the manufacturer has reason or should have reason to believe that such engines have been or will be imported in a piece of equipment.

(4) For an engine family using credits, a manufacturer may, at its option, include its entire production of that engine family in its calculation of credit usage for a given model year.

(5) A manufacturer may certify engine families at Family Emission Limits (FELs) above or below the applicable emission standard subject to the limitation in paragraph (6) of this section, provided the summation of the manufacturer's projected balance of credits from all credit transactions for each engine class in a given model year is greater than or equal to zero, as determined under paragraph (f).

(A) A manufacturer of an engine family with an FEL exceeding the applicable emission standard must obtain positive emission credits sufficient to address the associated credit shortfall via averaging, banking, or trading.

(B) An engine family with an FEL below the applicable emission standard may generate positive emission credits for averaging, banking, or trading, or a combination thereof.

(C) In the case of a production line test failure, credits may be used to cover subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL. Credits may be used to remedy a nonconformity determined by production line testing or new engine compliance testing, at the discretion of the Executive Officer.

(D) In the case of a production line testing failure pursuant to section 2407, a manufacturer may revise the FEL based upon production line testing results obtained under section 2407 and upon Executive Officer approval. The manufacturer may use certification credits to cover both past production and subsequent production as needed.

(6) No engine family may have an FEL that is greater than

(A) 180 g/bhp-hr HC+NO<sub>x</sub> for engines 0-65 cc, inclusive,

(B) 24.1 g/bhp-hr HC+NO<sub>x</sub> for engines greater than 65 cc and less than 225 cc, or

(C) 20 g/bhp-hr HC+NO<sub>x</sub> for engines greater than 225 cc.

(7) Manufacturers must demonstrate compliance under the averaging, banking, and trading provisions for a particular model year by 270 days after the end of the model year. An engine family generating negative credits for which the manufacturer does not obtain or generate an adequate number of positive credits by that date from the same or previous model year engines will violate the conditions of the Executive Order. The Executive Order may be voided *ab initio* for this engine family.

(c) Averaging.

(1) Negative credits from engine families with FELs above the applicable emission standard must be offset by positive credits from engine families having FELs below the applicable emission standard, as allowed under the provisions of this section. Averaging of credits in this manner is used to determine compliance under paragraph (f)(2).

(2) Subject to the limitations above, credits used in averaging for a given model year may be obtained from credits generated in the same model year by another engine family, credits banked in previous model years, or credits of the same or previous model year obtained through trading. The restrictions of this paragraph

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notwithstanding, credits from a given model year may be used to address credit needs of previous model year engines as allowed under paragraph (f)(3).

(d) Banking.

(1) Beginning with the 1999 model year, a manufacturer of an engine family with an FEL below the applicable emission standard for 2006 and subsequent years may bank credits in that model year for use in averaging and trading. Negative credits may be banked only according to the requirements of paragraph (f)(3) of this section.

(2) A manufacturer may bank emission credits only after the end of the model year and after ARB has reviewed the manufacturer's end-of-year reports. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging in the end-of-year report and final report.

(3) Credits declared for banking from the previous model year that have not been reviewed by ARB may be used in averaging or trading transactions. However, such credits may be revoked at a later time following ARB review of the end-of-year report or any subsequent audit actions.

(e) Trading.

(1) An engine manufacturer may exchange emission credits with other engine manufacturers in trading.

(2) Credits for trading can be obtained from credits banked in previous model years or credits generated during the model year of the trading transaction.

(3) Traded credits can be used for averaging or banking.

(4) Traded credits are subject to the limitations on use for past model years, and the use of credits from early banking as set forth in paragraph (c)(2).

(5) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. The Executive Officer may void Executive Orders of all engine families participating in a negative trade *ab initio*.

(f) Credit calculation and manufacturer compliance with emission standards.

(1) For each engine family, HC+NO<sub>x</sub> and Particulate Matter certification emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

$$\text{Credits} = (\text{Standard} - \text{FEL}) \times \text{Sales} \times \text{Power} \times \text{EDP} \times \text{Load Factor}$$

Where:

Standard = the current and applicable small off-road engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or Particulate Matter emission standard in grams per brake-horsepower hour as determined in Section 2403.

FEL = the family emission limit for the engine family in grams per brake-horsepower hour.

Sales = eligible sales as defined in section 2401. Annual sales projections are used to project credit availability for initial certification. Actual sales volume is used in determining actual credits for end-of-year compliance determination.

Power = the sales weighted maximum modal power, in horsepower. This is determined by multiplying the maximum modal power of each configuration within the family by its eligible sales, summing across all configurations and dividing by the eligible sales of the entire family. Manufacturers may use an alternative if approved by the Executive Officer.

EDP = the Emissions Durability Period for which the engine family was certified.

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the following formula:

$$G = \sum_{i=1}^n (\% \text{MTT mode}_i) \times (\% \text{MTS mode}_i) \times (\text{WF mode}_i)$$

Where:

%MTT mode<sub>i</sub> = percent of the maximum torque for mode i

%MTS mode<sub>i</sub> = percent of the maximum engine rotational speed for mode i

WF mode<sub>i</sub> = the weighting factor for mode i

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(2) Manufacturer compliance with the emission standard is determined on a corporate average basis at the end of each model year. A manufacturer is in compliance when the sum of positive and negative emission credits it holds is greater than or equal to zero, except that the sum of positive and negative credits for a given class may be less than zero as allowed under paragraph (3) of this section.

(3) If, as a result of production line testing as required in section 2407, an engine family is determined to be in noncompliance, the manufacturer may raise its FEL for past and future production as necessary. Further, a manufacturer may carry a negative credit balance (known also as a credit deficit) for the subject class and model year forward to the next model year. The credit deficit may be no larger than that created by the nonconforming family. If the credit deficit still exists after the model year following the model year in which the nonconformity occurred, the manufacturer must obtain and apply credits to offset the remaining credit deficit at a rate of 1.2 grams for each gram of deficit within the next model year. The provisions of this paragraph are subject to the limitations in paragraph (4) of this section.

(4) Regulations elsewhere in this section notwithstanding, if an engine manufacturer experiences two or more production line testing failures pursuant to the regulations in section 2407 of this article in a given model year, the manufacturer may raise the FEL of previously produced engines only to the extent that such engines represent no more than 10% of the manufacturer's total eligible sales for that model year. For any additional engines determined to be in noncompliance, the manufacturer must conduct offsetting projects approved in advance by the Executive Officer.

(5) If, as a result of production line testing under section 2407, a manufacturer desires to lower its FEL, it may do so subject to Executive Officer approval and demonstration that the family would meet the new FEL in the production line testing using the existing data.

(6) Except as allowed at paragraph (c) of this section, when a manufacturer is not in compliance with the applicable emission standard by the date 270 days after the end of the model year, considering all credit calculations and transactions completed by then, the manufacturer will be in violation of these regulations and the Executive Officer may, void *ab initio* the Executive Orders of engine families for which the manufacturer has not obtained sufficient positive emission credits.

(g) Certification Using Credits.

(1) In the application for certification a manufacturer must:

(A) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to be in noncompliance under paragraph (f)(2) when all credits are calculated for all the manufacturer's engine families.

(B) Declare an FEL for each engine family for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and Particulate Matter, if applicable. The FEL must have the same number of significant digits as the emission standard.

(C) Indicate the projected number of credits generated/needed for this family; the projected applicable eligible sales volume and the values required to calculate credits as given in paragraph (f).

(D) Submit calculations in accordance with paragraph (f) of projected emission credits (positive or negative) based on production projections for each family.

(E)(i) If the engine family is projected to generate negative emission credits, state specifically the source (manufacturer/engine family or reserved) and quantity of the credits necessary to offset the credit deficit according to projected production.

(ii) If the engine family is projected to generate credits, state specifically the recipient (manufacturer/engine family or reserved) and quantity of the credits used to offset a deficit, banked, or traded, according to where the projected credits will be applied.

(2) The manufacturer may supply the information required above in subparagraphs (C), (D), and (E) by use of a spreadsheet detailing the manufacturer's annual production plans and the credits generated or consumed by each engine family.

(3) All Executive Orders issued are conditional upon manufacturer compliance with the provisions of this section both during and after the model year of production.

(4) Failure to comply with all provisions of this section will be considered to be a failure to satisfy the conditions upon which the Executive Order was issued, and the Executive Order may be determined to be void *ab initio*.

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(5) The manufacturer bears the burden of establishing to the satisfaction of the Executive Officer that the conditions upon which the Executive Order was issued were satisfied or waived.

(6) Projected credits based on information supplied in the certification application may be used to obtain an Executive Order. However, any such credits may be revoked based on review of end-of-year reports, follow-up audits, and any other verification steps considered appropriate by the Executive Officer.

(h) Maintenance of records.

(1) The manufacturer must establish, maintain, and retain the following adequately organized and indexed records for each engine family:

(A) ARB engine family identification code,

(B) Family Emission Limit (FEL) or FELs where FEL changes have been implemented during the model year,

(C) Maximum modal power for each configuration sold or an alternative approved by the Executive Officer.

(D) Projected sales volume for the model year, and

(E) Records appropriate to establish the quantities of engines that constitute eligible sales for each power rating for each FEL.

(2) Any manufacturer producing an engine family participating in trading reserved credits must maintain the following records on a quarterly basis for each such engine family:

(A) The engine family,

(B) The actual quarterly and cumulative applicable production/sales volume,

(C) The values required to calculate credits as given in paragraph (f),

(D) The resulting type and number of credits generated/required,

(E) How and where credit surpluses are dispersed, and

(F) How and through what means credit deficits are met.

(3) The manufacturer must retain all records required to be maintained under this section for a period of eight years from the due date for the end-of-model year report. Records may be retained as hard copy or reduced to microfilm, diskettes, and so forth, depending on the manufacturer's record retention procedure; provided, that in every case all information contained in the hard copy is retained.

(4) Nothing in this section limits the Executive Officer's discretion in requiring the manufacturer to retain additional records or submit information not specifically required by this section.

(5) Pursuant to a request made by the Executive Officer, the manufacturer must submit to the Executive Officer the information that the manufacturer is required to retain.

(6) ARB may void ab initio the Executive Order for an engine family for which the manufacturer fails to retain the records required in this section or to provide such information to the Executive Officer upon request.

(i) End-of-year and final reports.

(1) End-of-year and final reports must indicate the engine family, the actual sales volume, the values required to calculate credits as given in paragraph (f), and the number of credits generated/required. Manufacturers must also submit how and where credit surpluses were dispersed (or are to be banked) and/or how and through what means credit deficits were met. Copies of contracts related to credit trading must be included or supplied by the broker, if applicable. The report must include a calculation of credit balances to show that the credit summation for each class of engines is equal to or greater than zero (or less than zero in cases of negative credit balances as permitted in paragraph (f)(3)).

(2) The calculation of eligible sales (as defined in section 2401) for end-of-year and final reports must be based on the location of the point of first retail sale (for example, retail customer or dealer) also called the final product purchase location. Upon advance written request, the Executive Officer will consider other methods to track engines for credit calculation purposes, such as shipments to distributors of products intended for sale in California, that provide high levels of confidence that eligible sales are accurately counted.

(3)(A) End-of-year reports must be submitted within 90 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731.

(B) Unless otherwise approved by the Executive Officer, final reports must be submitted within 270 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731.

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(4) Failure by a manufacturer to submit any end-of-year or final reports in the specified time for any engines subject to regulation under this section is a violation of Section 2403 for each engine.

(5) A manufacturer generating credits for banking only who fails to submit end-of-year reports in the applicable specified time period (90 days after the end of the model year) may not use the credits until such reports are received and reviewed by ARB. Use of projected credits pending ARB review is not permitted in these circumstances.

(6) Errors discovered by ARB or the manufacturer in the end-of-year report, including errors in credit calculation, may be corrected in the final report.

(7) If ARB or the manufacturer determines that a reporting error occurred on an end-of-year or final report previously submitted to ARB under this section, the manufacturer's credits and credit calculations must be recalculated. Erroneous positive credits will be void except as provided in paragraph (h) of this section. Erroneous negative credit balances may be adjusted by ARB.

(8) If within 270 days of the end of the model year, ARB review determines a reporting error in the manufacturer's favor (that is, resulting in an increased credit balance) or if the manufacturer discovers such an error within 270 days of the end of the model year, ARB must restore the credits for use by the manufacturer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

##### **REFERENCE**